SEQUENCE LISTING

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Kamada, Nobuo
Jishage, Kou-ichi

<120> Nonhuman animals for antibody production, and methods and systems for producing antibodies using such animals

<130> 14875-167US1

<150> PCT/JP2005/006298
<151> 2005-03-31

<150> JP2004-107669
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<170> PatentIn version 3.1

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Ser Ala Phe Ala Ala Glu His Cys Asn Ala Gln Met Lys Thr Gly Pro
            20                  25                  30

tac aag att aaa aac ttg gac att acc ccg ccc aag gaa acg ctg caa      144
Tyr Lys Ile Lys Asn Leu Asp Ile Thr Pro Pro Lys Glu Thr Leu Gln
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aag gac gtg gaa atc acc atc gtg gag acg gac tac aac gaa aac gtg      192
Lys Asp Val Glu Ile Thr Ile Val Glu Thr Asp Tyr Asn Glu Asn Val
    50                  55                  60

att atc ggc tac aag ggg tac tac cag gcg tat gcg tac aac ggc ggc      240
Ile Ile Gly Tyr Lys Gly Tyr Tyr Gln Ala Tyr Ala Tyr Asn Gly Gly
65                  70                  75                  80

tcg ctg gat ccc aac aca cgc gtc gaa gaa acc atg aaa acg ctg aat      288
Ser Leu Asp Pro Asn Thr Arg Val Glu Glu Thr Met Lys Thr Leu Asn
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gtg ggc aaa gag gat ttg ctt atg tgg agc atc agg cag cag tgc gag      336
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gtg ggc gaa gag ctg atc gac cgt tgg ggc agt gac agc gac gac tgt      384
Val Gly Glu Glu Leu Ile Asp Arg Trp Gly Ser Asp Ser Asp Asp Cys
        115                 120                 125

ttt cgc gac aac gag ggc cgc ggc cag tgg gtc aaa ggc aaa gag ttg      432
Phe Arg Asp Asn Glu Gly Arg Gly Gln Trp Val Lys Gly Lys Glu Leu
    130                 135                 140

gtg aag cgg cag aat aac aat cac ttt gcg cac cac acg tgc aac aaa      480
Val Lys Arg Gln Asn Asn Asn His Phe Ala His His Thr Cys Asn Lys
145                 150                 155                 160

tcg tgg cga tgc ggc att tcc act tcg aaa atg tac agc agg ctc gag      528
Ser Trp Arg Cys Gly Ile Ser Thr Ser Lys Met Tyr Ser Arg Leu Glu
                165                 170                 175

tgc cag gac gac acg gac gag tgc cag gta tac att ttg gac gct gag      576
Cys Gln Asp Asp Thr Asp Glu Cys Gln Val Tyr Ile Leu Asp Ala Glu
            180                 185                 190

ggc aac ccc atc aac gtg acc gtg gac act gtg ctt cat cga gac ggc      624
Gly Asn Pro Ile Asn Val Thr Val Asp Thr Val Leu His Arg Asp Gly
        195                 200                 205

gtg agt atg att ctc aaa caa aag tct acg ttc acc acg cgc caa ata      672
Val Ser Met Ile Leu Lys Gln Lys Ser Thr Phe Thr Thr Arg Gln Ile
    210                 215                 220

aaa gct gcg tgt ctg ctc att aaa gat gac aaa aat aac ccc gag tcg      720
Lys Ala Ala Cys Leu Leu Ile Lys Asp Asp Lys Asn Asn Pro Glu Ser
225                 230                 235                 240

gtg aca cgc gaa cac tgt ttg att gac aat gat ata tat gat ctt tct      768
Val Thr Arg Glu His Cys Leu Ile Asp Asn Asp Ile Tyr Asp Leu Ser
                245                 250                 255

aaa aac acg tgg aac tgc aag ttt aac aga tgc att aaa cgc aaa gtc      816
Lys Asn Thr Trp Asn Cys Lys Phe Asn Arg Cys Ile Lys Arg Lys Val
            260                 265                 270

gag cac cga gtc aag aag cgg ccg ccc act tgg cgc cac aac gtt aga      864
Glu His Arg Val Lys Lys Arg Pro Pro Thr Trp Arg His Asn Val Arg
        275                 280                 285

gcc aag tac aca gag gga gac act gcc acc aaa ggc gac ctg atg cat      912
Ala Lys Tyr Thr Glu Gly Asp Thr Ala Thr Lys Gly Asp Leu Met His
    290                 295                 300

att caa gag gag ctg atg tac gaa aac gat ttg ctg aaa atg aac att      960
Ile Gln Glu Glu Leu Met Tyr Glu Asn Asp Leu Leu Lys Met Asn Ile
305                 310                 315                 320
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gag ctg atg cat gcg cac atc aac aag cta aac aat atg ctg cac gac     1008
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ctg ata gtc tcc gtg gcc aag gtg gac gag cgt ttg att ggc aat ctc     1056
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            340                 345                 350

atg aac aac tct gtt tct tca aca ttt ttg tcg gac gac acg ttt ttg     1104
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ctg atg ccg tgc acc aat ccg ccg gca cac acc agt aat tgc tac aac     1152
Leu Met Pro Cys Thr Asn Pro Pro Ala His Thr Ser Asn Cys Tyr Asn
    370                 375                 380

aac agc atc tac aaa gaa ggg cgt tgg gtg gcc aac acg gac tcg tcg     1200
Asn Ser Ile Tyr Lys Glu Gly Arg Trp Val Ala Asn Thr Asp Ser Ser
385                 390                 395                 400

caa tgc ata gat ttt agc aac tac aag gaa cta gca att gac gac gac     1248
Gln Cys Ile Asp Phe Ser Asn Tyr Lys Glu Leu Ala Ile Asp Asp Asp
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gtc gag ttt tgg atc ccg acc atc ggc aac acg acc tat cac gac agt     1296
Val Glu Phe Trp Ile Pro Thr Ile Gly Asn Thr Thr Tyr His Asp Ser
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tgg aaa gat gcc agc ggc tgg tcg ttt att gcc caa caa aaa agc aac     1344
Trp Lys Asp Ala Ser Gly Trp Ser Phe Ile Ala Gln Gln Lys Ser Asn
        435                 440                 445

ctc ata acc acc atg gag aac acc aag ttt ggc ggc gtc ggc acc agt     1392
Leu Ile Thr Thr Met Glu Asn Thr Lys Phe Gly Gly Val Gly Thr Ser
    450                 455                 460

ctg agc gac atc act tcc atg gct gaa ggc gaa ttg gcc gct aaa ttg     1440
Leu Ser Asp Ile Thr Ser Met Ala Glu Gly Glu Leu Ala Ala Lys Leu
465                 470                 475                 480

act tcg ttc atg ttt ggt cat gta gtt aac ttt gta att ata tta att     1488
Thr Ser Phe Met Phe Gly His Val Val Asn Phe Val Ile Ile Leu Ile
                485                 490                 495

gtg att tta ttt ttg tac tgt atg att aga aac cgt aat aga caa tat     1536
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            20                  25                  30

Tyr Lys Ile Lys Asn Leu Asp Ile Thr Pro Pro Lys Glu Thr Leu Gln
        35                  40                  45

Lys Asp Val Glu Ile Thr Ile Val Glu Thr Asp Tyr Asn Glu Asn Val
    50                  55                  60

Ile Ile Gly Tyr Lys Gly Tyr Tyr Gln Ala Tyr Ala Tyr Asn Gly Gly
65                  70                  75                  80

Ser Leu Asp Pro Asn Thr Arg Val Glu Glu Thr Met Lys Thr Leu Asn
                85                  90                  95

Val Gly Lys Glu Asp Leu Leu Met Trp Ser Ile Arg Gln Gln Cys Glu
            100                 105                 110

Val Gly Glu Glu Leu Ile Asp Arg Trp Gly Ser Asp Ser Asp Asp Cys
        115                 120                 125

Phe Arg Asp Asn Glu Gly Arg Gly Gln Trp Val Lys Gly Lys Glu Leu
    130                 135                 140

Val Lys Arg Gln Asn Asn Asn His Phe Ala His His Thr Cys Asn Lys
145                 150                 155                 160

Ser Trp Arg Cys Gly Ile Ser Thr Ser Lys Met Tyr Ser Arg Leu Glu
                165                 170                 175

Cys Gln Asp Asp Thr Asp Glu Cys Gln Val Tyr Ile Leu Asp Ala Glu
            180                 185                 190

Gly Asn Pro Ile Asn Val Thr Val Asp Thr Val Leu His Arg Asp Gly
        195                 200                 205

Val Ser Met Ile Leu Lys Gln Lys Ser Thr Phe Thr Thr Arg Gln Ile
    210                 215                 220

Lys Ala Ala Cys Leu Leu Ile Lys Asp Asp Lys Asn Asn Pro Glu Ser
225                 230                 235                 240

Val Thr Arg Glu His Cys Leu Ile Asp Asn Asp Ile Tyr Asp Leu Ser
                245                 250                 255

Lys Asn Thr Trp Asn Cys Lys Phe Asn Arg Cys Ile Lys Arg Lys Val
            260                 265                 270

Glu His Arg Val Lys Lys Arg Pro Pro Thr Trp Arg His Asn Val Arg
        275                 280                 285

Ala Lys Tyr Thr Glu Gly Asp Thr Ala Thr Lys Gly Asp Leu Met His
    290                 295                 300
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Ile Gln Glu Glu Leu Met Tyr Glu Asn Asp Leu Leu Lys Met Asn Ile
305                 310                 315                 320

Glu Leu Met His Ala His Ile Asn Lys Leu Asn Asn Met Leu His Asp
                325                 330                 335

Leu Ile Val Ser Val Ala Lys Val Asp Glu Arg Leu Ile Gly Asn Leu
            340                 345                 350

Met Asn Asn Ser Val Ser Ser Thr Phe Leu Ser Asp Asp Thr Phe Leu
        355                 360                 365

Leu Met Pro Cys Thr Asn Pro Pro Ala His Thr Ser Asn Cys Tyr Asn
    370                 375                 380

Asn Ser Ile Tyr Lys Glu Gly Arg Trp Val Ala Asn Thr Asp Ser Ser
385                 390                 395                 400

Gln Cys Ile Asp Phe Ser Asn Tyr Lys Glu Leu Ala Ile Asp Asp Asp
                405                 410                 415

Val Glu Phe Trp Ile Pro Thr Ile Gly Asn Thr Thr Tyr His Asp Ser
            420                 425                 430

Trp Lys Asp Ala Ser Gly Trp Ser Phe Ile Ala Gln Gln Lys Ser Asn
        435                 440                 445

Leu Ile Thr Thr Met Glu Asn Thr Lys Phe Gly Gly Val Gly Thr Ser
    450                 455                 460

Leu Ser Asp Ile Thr Ser Met Ala Glu Gly Glu Leu Ala Ala Lys Leu
465                 470                 475                 480

Thr Ser Phe Met Phe Gly His Val Val Asn Phe Val Ile Ile Leu Ile
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tct gcc ttt gcg gcg gag cac tgc aac gcg caa atg aag acg ggt ccg       96
Ser Ala Phe Ala Ala Glu His Cys Asn Ala Gln Met Lys Thr Gly Pro
            20                  25                  30
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tac aag att aaa aac ttg gac att acc ccg ccc aag gaa acg ctg caa      144
Tyr Lys Ile Lys Asn Leu Asp Ile Thr Pro Pro Lys Glu Thr Leu Gln
        35                  40                  45

aag gac gtg gaa atc acc atc gtg gag acg gac tac aac gaa aac gtg      192
Lys Asp Val Glu Ile Thr Ile Val Glu Thr Asp Tyr Asn Glu Asn Val
    50                  55                  60

att atc ggc tac aag ggg tac tac cag gcg tat gcg tac aac ggc ggc      240
Ile Ile Gly Tyr Lys Gly Tyr Tyr Gln Ala Tyr Ala Tyr Asn Gly Gly
65                  70                  75                  80

tcg ctg gat ccc aac aca cgc gtc gaa gaa acc atg aaa acg ctg aat      288
Ser Leu Asp Pro Asn Thr Arg Val Glu Glu Thr Met Lys Thr Leu Asn
                85                  90                  95

gtg ggc aaa gag gat ttg ctt atg tgg agc atc agg cag cag tgc gag      336
Val Gly Lys Glu Asp Leu Leu Met Trp Ser Ile Arg Gln Gln Cys Glu
            100                 105                 110

gtg ggc gaa gag ctg atc gac cgt tgg ggc agt gac agc gac gac tgt      384
Val Gly Glu Glu Leu Ile Asp Arg Trp Gly Ser Asp Ser Asp Asp Cys
        115                 120                 125

ttt cgc gac aac gag ggc cgc ggc cag tgg gtc aaa ggc aaa gag ttg      432
Phe Arg Asp Asn Glu Gly Arg Gly Gln Trp Val Lys Gly Lys Glu Leu
    130                 135                 140

gtg aag cgg cag aat aac aat cac ttt gcg cac cac acg tgc aac aaa      480
Val Lys Arg Gln Asn Asn Asn His Phe Ala His His Thr Cys Asn Lys
145                 150                 155                 160

tcg tgg cga tgc ggc att tcc act tcg aaa atg tac agc agg ctc gag      528
Ser Trp Arg Cys Gly Ile Ser Thr Ser Lys Met Tyr Ser Arg Leu Glu
                165                 170                 175

tgc cag gac gac acg gac gag tgc cag gta tac att ttg gac gct gag      576
Cys Gln Asp Asp Thr Asp Glu Cys Gln Val Tyr Ile Leu Asp Ala Glu
            180                 185                 190

ggc aac ccc atc aac gtg acc gtg gac act gtg ctt cat cga gac ggc      624
Gly Asn Pro Ile Asn Val Thr Val Asp Thr Val Leu His Arg Asp Gly
        195                 200                 205

gtg agt atg att ctc aaa caa aag tct acg ttc acc acg cgc caa ata      672
Val Ser Met Ile Leu Lys Gln Lys Ser Thr Phe Thr Thr Arg Gln Ile
    210                 215                 220

aaa gct gcg tgt ctg ctc att aaa gat gac aaa aat aac ccc gag tcg      720
Lys Ala Ala Cys Leu Leu Ile Lys Asp Asp Lys Asn Asn Pro Glu Ser
225                 230                 235                 240

gtg aca cgc gaa cac tgt ttg att gac aat gat ata tat gat ctt tct      768
Val Thr Arg Glu His Cys Leu Ile Asp Asn Asp Ile Tyr Asp Leu Ser
                245                 250                 255
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aaa aac acg tgg aac tgc aag ttt aac aga tgc att aaa cgc aaa gtc      816
Lys Asn Thr Trp Asn Cys Lys Phe Asn Arg Cys Ile Lys Arg Lys Val
            260                 265                 270

gag cac cga gtc aag aag cgg ccg ccc act tgg cgc cac aac gtt aga      864
Glu His Arg Val Lys Lys Arg Pro Pro Thr Trp Arg His Asn Val Arg
        275                 280                 285

gcc aag tac aca gag gga gac act gcc acc aaa ggc gac ctg atg cat      912
Ala Lys Tyr Thr Glu Gly Asp Thr Ala Thr Lys Gly Asp Leu Met His
    290                 295                 300

att caa gag gag ctg atg tac gaa aac gat ttg ctg aaa atg aac att      960
Ile Gln Glu Glu Leu Met Tyr Glu Asn Asp Leu Leu Lys Met Asn Ile
305                 310                 315                 320

gag ctg atg cat gcg cac atc aac aag cta aac aat atg ctg cac gac     1008
Glu Leu Met His Ala His Ile Asn Lys Leu Asn Asn Met Leu His Asp
                325                 330                 335

ctg ata gtc tcc gtg gcc aag gtg gac gag cgt ttg att ggc aat ctc     1056
Leu Ile Val Ser Val Ala Lys Val Asp Glu Arg Leu Ile Gly Asn Leu
            340                 345                 350

atg aac aac tct gtt tct tca aca ttt ttg tcg gac gac acg ttt ttg     1104
Met Asn Asn Ser Val Ser Ser Thr Phe Leu Ser Asp Asp Thr Phe Leu
        355                 360                 365

ctg atg ccg tgc acc aat ccg ccg gca cac acc agt aat tgc tac aac     1152
Leu Met Pro Cys Thr Asn Pro Pro Ala His Thr Ser Asn Cys Tyr Asn
    370                 375                 380

aac agc atc tac aaa gaa ggg cgt tgg gtg gcc aac acg gac tcg tcg     1200
Asn Ser Ile Tyr Lys Glu Gly Arg Trp Val Ala Asn Thr Asp Ser Ser
385                 390                 395                 400

caa tgc ata gat ttt agc aac tac aag gaa cta gca att gac gac gac     1248
Gln Cys Ile Asp Phe Ser Asn Tyr Lys Glu Leu Ala Ile Asp Asp Asp
                405                 410                 415

gtc gag ttt tgg atc ccg acc atc ggc aac acg acc tat cac gac agt     1296
Val Glu Phe Trp Ile Pro Thr Ile Gly Asn Thr Thr Tyr His Asp Ser
            420                 425                 430

tgg aaa gat gcc agc ggc tgg tcg ttt att gcc caa caa aaa agc aac     1344
Trp Lys Asp Ala Ser Gly Trp Ser Phe Ile Ala Gln Gln Lys Ser Asn
        435                 440                 445

ctc ata acc acc atg gag aac acc aag ttt ggc ggc gtc ggc acc agt     1392
Leu Ile Thr Thr Met Glu Asn Thr Lys Phe Gly Gly Val Gly Thr Ser
    450                 455                 460

ctg agc gac atc act tcc atg gct gaa ggc gaa ttg gcc gct aaa ttg     1440
Leu Ser Asp Ile Thr Ser Met Ala Glu Gly Glu Leu Ala Ala Lys Leu
465                 470                 475                 480

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35 40 45

Lys Asp Val Glu Ile Thr Ile Val Glu Thr Asp Tyr Asn Glu Asn Val
50 55 60

Ile Ile Gly Tyr Lys Gly Tyr Tyr Gln Ala Tyr Ala Tyr Asn Gly Gly
65 70 75 80

Ser Leu Asp Pro Asn Thr Arg Val Glu Glu Thr Met Lys Thr Leu Asn
85 90 95

Val Gly Lys Glu Asp Leu Leu Met Trp Ser Ile Arg Gln Gln Cys Glu
100 105 110

Val Gly Glu Glu Leu Ile Asp Arg Trp Gly Ser Asp Ser Asp Asp Cys
115 120 125

Phe Arg Asp Asn Glu Gly Arg Gly Gln Trp Val Lys Gly Lys Glu Leu
130 135 140

Val Lys Arg Gln Asn Asn Asn His Phe Ala His His Thr Cys Asn Lys
145 150 155 160

Ser Trp Arg Cys Gly Ile Ser Thr Ser Lys Met Tyr Ser Arg Leu Glu
165 170 175

Cys Gln Asp Asp Thr Asp Glu Cys Gln Val Tyr Ile Leu Asp Ala Glu
180 185 190

Gly Asn Pro Ile Asn Val Thr Val Asp Thr Val Leu His Arg Asp Gly
195 200 205

Val Ser Met Ile Leu Lys Gln Lys Ser Thr Phe Thr Thr Arg Gln Ile
210 215 220

Lys Ala Ala Cys Leu Leu Ile Lys Asp Asp Lys Asn Asn Pro Glu Ser
225 230 235 240

Val Thr Arg Glu His Cys Leu Ile Asp Asn Asp Ile Tyr Asp Leu Ser
245 250 255

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Lys Asn Thr Trp Asn Cys Lys Phe Asn Arg Cys Ile Lys Arg Lys Val
            260                 265                 270

Glu His Arg Val Lys Lys Arg Pro Pro Thr Trp Arg His Asn Val Arg
        275                 280                 285

Ala Lys Tyr Thr Glu Gly Asp Thr Ala Thr Lys Gly Asp Leu Met His
    290                 295                 300

Ile Gln Glu Glu Leu Met Tyr Glu Asn Asp Leu Leu Lys Met Asn Ile
305                 310                 315                 320

Glu Leu Met His Ala His Ile Asn Lys Leu Asn Asn Met Leu His Asp
                325                 330                 335

Leu Ile Val Ser Val Ala Lys Val Asp Glu Arg Leu Ile Gly Asn Leu
            340                 345                 350

Met Asn Asn Ser Val Ser Ser Thr Phe Leu Ser Asp Asp Thr Phe Leu
        355                 360                 365

Leu Met Pro Cys Thr Asn Pro Pro Ala His Thr Ser Asn Cys Tyr Asn
    370                 375                 380

Asn Ser Ile Tyr Lys Glu Gly Arg Trp Val Ala Asn Thr Asp Ser Ser
385                 390                 395                 400

Gln Cys Ile Asp Phe Ser Asn Tyr Lys Glu Leu Ala Ile Asp Asp Asp
                405                 410                 415

Val Glu Phe Trp Ile Pro Thr Ile Gly Asn Thr Thr Tyr His Asp Ser
            420                 425                 430

Trp Lys Asp Ala Ser Gly Trp Ser Phe Ile Ala Gln Gln Lys Ser Asn
        435                 440                 445

Leu Ile Thr Thr Met Glu Asn Thr Lys Phe Gly Gly Val Gly Thr Ser
    450                 455                 460

Leu Ser Asp Ile Thr Ser Met Ala Glu Gly Glu Leu Ala Ala Lys Leu
465                 470                 475                 480

Thr Ser Phe Met Phe Gly His Val
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Ala Ala His Ser Ala Phe Ala Ala Glu His Cys Asn Ala Gln Met Lys
20 25 30

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acg ggt ccg tac aag att aaa aac ttg gac att acc ccg ccc aag gaa      145
Thr Gly Pro Tyr Lys Ile Lys Asn Leu Asp Ile Thr Pro Pro Lys Glu
          35                  40                  45

acg ctg caa aag gac gtg gaa atc acc atc gtg gag acg gac tac aac      193
Thr Leu Gln Lys Asp Val Glu Ile Thr Ile Val Glu Thr Asp Tyr Asn
    50                  55                  60

gaa aac gtg att atc ggc tac aag ggg tac tac cag gcg tat gcg tac      241
Glu Asn Val Ile Ile Gly Tyr Lys Gly Tyr Tyr Gln Ala Tyr Ala Tyr
65                  70                  75                  80

aac ggc ggc tcg ctg gat ccc aac aca cgc gtc gaa gaa acc atg aaa      289
Asn Gly Gly Ser Leu Asp Pro Asn Thr Arg Val Glu Glu Thr Met Lys
                85                  90                  95

acg ctg aat gtg ggc aaa gag gat ttg ctt atg tgg agc atc agg cag      337
Thr Leu Asn Val Gly Lys Glu Asp Leu Leu Met Trp Ser Ile Arg Gln
            100                 105                 110

cag tgc gag gtg ggc gaa gag ctg atc gac cgt tgg ggc agt gac agc      385
Gln Cys Glu Val Gly Glu Glu Leu Ile Asp Arg Trp Gly Ser Asp Ser
        115                 120                 125

gac gac tgt ttt cgc gac aac gag ggc cgc ggc cag tgg gtc aaa ggc      433
Asp Asp Cys Phe Arg Asp Asn Glu Gly Arg Gly Gln Trp Val Lys Gly
    130                 135                 140

aaa gag ttg gtg aag cgg cag aat aac aat cac ttt gcg cac cac acg      481
Lys Glu Leu Val Lys Arg Gln Asn Asn Asn His Phe Ala His His Thr
145                 150                 155                 160

tgc aac aaa tcg tgg cga tgc ggc att tcc act tcg aaa atg tac agc      529
Cys Asn Lys Ser Trp Arg Cys Gly Ile Ser Thr Ser Lys Met Tyr Ser
                165                 170                 175

agg ctc gag tgc cag gac gac acg gac gag tgc cag gta tac att ttg      577
Arg Leu Glu Cys Gln Asp Asp Thr Asp Glu Cys Gln Val Tyr Ile Leu
            180                 185                 190

gac gct gag ggc aac ccc atc aac gtg acc gtg gac act gtg ctt cat      625
Asp Ala Glu Gly Asn Pro Ile Asn Val Thr Val Asp Thr Val Leu His
        195                 200                 205

cga gac ggc gtg agt atg att ctc aaa caa aag tct acg ttc acc acg      673
Arg Asp Gly Val Ser Met Ile Leu Lys Gln Lys Ser Thr Phe Thr Thr
    210                 215                 220

cgc caa ata aaa gct gcg tgt ctg ctc att aaa gat gac aaa aat aac      721
Arg Gln Ile Lys Ala Ala Cys Leu Leu Ile Lys Asp Asp Lys Asn Asn
225                 230                 235                 240

ccc gag tcg gtg aca cgc gaa cac tgt ttg att gac aat gat ata tat      769
Pro Glu Ser Val Thr Arg Glu His Cys Leu Ile Asp Asn Asp Ile Tyr
                245                 250                 255
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gat ctt tct aaa aac acg tgg aac tgc aag ttt aac aga tgc att aaa      817
Asp Leu Ser Lys Asn Thr Trp Asn Cys Lys Phe Asn Arg Cys Ile Lys
            260                 265                 270

cgc aaa gtc gag cac cga gtc aag aag cgg ccg ccc act tgg cgc cac      865
Arg Lys Val Glu His Arg Val Lys Lys Arg Pro Pro Thr Trp Arg His
        275                 280                 285

aac gtt aga gcc aag tac aca gag gga gac act gcc acc aaa ggc gac      913
Asn Val Arg Ala Lys Tyr Thr Glu Gly Asp Thr Ala Thr Lys Gly Asp
    290                 295                 300

ctg atg cat att caa gag gag ctg atg tac gaa aac gat ttg ctg aaa      961
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305                 310                 315                 320

atg aac att gag ctg atg cat gcg cac atc aac aag cta aac aat atg     1009
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ctg cac gac ctg ata gtc tcc gtg gcc aag gtg gac gag cgt ttg att     1057
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Gly Asn Leu Met Asn Asn Ser Val Ser Ser Thr Phe Leu Ser Asp Asp
        355                 360                 365

acg ttt ttg ctg atg ccg tgc acc aat ccg ccg gca cac acc agt aat     1153
Thr Phe Leu Leu Met Pro Cys Thr Asn Pro Pro Ala His Thr Ser Asn
    370                 375                 380

tgc tac aac aac agc atc tac aaa gaa ggg cgt tgg gtg gcc aac acg     1201
Cys Tyr Asn Asn Ser Ile Tyr Lys Glu Gly Arg Trp Val Ala Asn Thr
385                 390                 395                 400

gac tcg tcg caa tgc ata gat ttt agc aac tac aag gaa cta gca att     1249
Asp Ser Ser Gln Cys Ile Asp Phe Ser Asn Tyr Lys Glu Leu Ala Ile
                405                 410                 415

gac gac gac gtc gag ttt tgg atc ccg acc atc ggc aac acg acc tat     1297
Asp Asp Asp Val Glu Phe Trp Ile Pro Thr Ile Gly Asn Thr Thr Tyr
            420                 425                 430

cac gac agt tgg aaa gat gcc agc ggc tgg tcg ttt att gcc caa caa     1345
His Asp Ser Trp Lys Asp Ala Ser Gly Trp Ser Phe Ile Ala Gln Gln
        435                 440                 445

aaa agc aac ctc ata acc acc atg gag aac acc aag ttt ggc ggc gtc     1393
Lys Ser Asn Leu Ile Thr Thr Met Glu Asn Thr Lys Phe Gly Gly Val
    450                 455                 460

ggc acc agt ctg agc gac atc act tcc atg gct gaa ggc gaa ttg gcc     1441
Gly Thr Ser Leu Ser Asp Ile Thr Ser Met Ala Glu Gly Glu Leu Ala
465                 470                 475                 480

gct aaa ttg act tcg ttc atg ttt ggt cat gta taatgagaat tc           1486
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Ala Lys Leu Thr Ser Phe Met Phe Gly His Val
485 490

<210> 10
<211> 491
<212> PRT
<213> Baculovirus

<400> 10

Asn Ser Thr Met Val Ser Ala Ile Val Leu Tyr Val Leu Leu Ala Ala
1 5 10 15

Ala Ala His Ser Ala Phe Ala Ala Glu His Cys Asn Ala Gln Met Lys
20 25 30

Thr Gly Pro Tyr Lys Ile Lys Asn Leu Asp Ile Thr Pro Pro Lys Glu
35 40 45

Thr Leu Gln Lys Asp Val Glu Ile Thr Ile Val Glu Thr Asp Tyr Asn
50 55 60

Glu Asn Val Ile Ile Gly Tyr Lys Gly Tyr Tyr Gln Ala Tyr Ala Tyr
65 70 75 80

Asn Gly Gly Ser Leu Asp Pro Asn Thr Arg Val Glu Glu Thr Met Lys
85 90 95

Thr Leu Asn Val Gly Lys Glu Asp Leu Leu Met Trp Ser Ile Arg Gln
100 105 110

Gln Cys Glu Val Gly Glu Glu Leu Ile Asp Arg Trp Gly Ser Asp Ser
115 120 125

Asp Asp Cys Phe Arg Asp Asn Glu Gly Arg Gly Gln Trp Val Lys Gly
130 135 140

Lys Glu Leu Val Lys Arg Gln Asn Asn Asn His Phe Ala His His Thr
145 150 155 160

Cys Asn Lys Ser Trp Arg Cys Gly Ile Ser Thr Ser Lys Met Tyr Ser
165 170 175

Arg Leu Glu Cys Gln Asp Asp Thr Asp Glu Cys Gln Val Tyr Ile Leu
180 185 190

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Asp Ala Glu Gly Asn Pro Ile Asn Val Thr Val Asp Thr Val Leu His
        195                 200                 205

Arg Asp Gly Val Ser Met Ile Leu Lys Gln Lys Ser Thr Phe Thr Thr
    210                 215                 220

Arg Gln Ile Lys Ala Ala Cys Leu Leu Ile Lys Asp Asp Lys Asn Asn
225                 230                 235                 240

Pro Glu Ser Val Thr Arg Glu His Cys Leu Ile Asp Asn Asp Ile Tyr
                245                 250                 255

Asp Leu Ser Lys Asn Thr Trp Asn Cys Lys Phe Asn Arg Cys Ile Lys
            260                 265                 270

Arg Lys Val Glu His Arg Val Lys Lys Arg Pro Pro Thr Trp Arg His
        275                 280                 285

Asn Val Arg Ala Lys Tyr Thr Glu Gly Asp Thr Ala Thr Lys Gly Asp
    290                 295                 300

Leu Met His Ile Gln Glu Glu Leu Met Tyr Glu Asn Asp Leu Leu Lys
305                 310                 315                 320

Met Asn Ile Glu Leu Met His Ala His Ile Asn Lys Leu Asn Asn Met
                325                 330                 335

Leu His Asp Leu Ile Val Ser Val Ala Lys Val Asp Glu Arg Leu Ile
            340                 345                 350

Gly Asn Leu Met Asn Asn Ser Val Ser Ser Thr Phe Leu Ser Asp Asp
        355                 360                 365

Thr Phe Leu Leu Met Pro Cys Thr Asn Pro Pro Ala His Thr Ser Asn
    370                 375                 380

Cys Tyr Asn Asn Ser Ile Tyr Lys Glu Gly Arg Trp Val Ala Asn Thr
385                 390                 395                 400

Asp Ser Ser Gln Cys Ile Asp Phe Ser Asn Tyr Lys Glu Leu Ala Ile
                405                 410                 415
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Asp Asp Asp Val Glu Phe Trp Ile Pro Thr Ile Gly Asn Thr Thr Tyr
            420                 425                 430

His Asp Ser Trp Lys Asp Ala Ser Gly Trp Ser Phe Ile Ala Gln Gln
        435                 440                 445

Lys Ser Asn Leu Ile Thr Thr Met Glu Asn Thr Lys Phe Gly Gly Val
    450                 455                 460

Gly Thr Ser Leu Ser Asp Ile Thr Ser Met Ala Glu Gly Glu Leu Ala
465                 470                 475                 480

Ala Lys Leu Thr Ser Phe Met Phe Gly His Val
                485                 490
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